RBH-AXS-OPTMUX5

5 Channel RS-485 Multiplexer

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Introduction

The RBH-AXS-OPTOMUX5 is a 5 channel RS-485 Repeater. Designed to repeat RS-485 half-duplex data with 3kV isolation between each of the 5 channels, this module allows users to scale SafeSuite installations from 32 keypads up to a maximum of 255 keypads. Each repeater can extend communication to 96 keypads across 3 of the channels or 128 keypads across 4 of the channels (last repeater in line).

Features

The RBH-AXS-OPTOMUX5 is a “true” serial repeater. Data received on any one channel is repeated to all other channels. Each channel becomes the start of an isolated and buffered "star configuration" branch, expanding the network while observing the RS-485 loading rules.

The RS-485 drivers allow 32 single unit loads up to 4000 ft. per channel.

Robust components protect the unit from destructive differential transients often found in industrial environments.

Fast auto switching between transmit and receive mode, the RBH-AXS-OPTOMUX5 requires no software delays, eliminates timing problems and data collisions.

Efficient onboard polarity protected power regulator accepts supply voltages from 9 to 35 VDC, at 2.5 Watts max.

Jumper settings allow for easy field adjustments for RS-485 bias termination resistors and RX/TX operation for each channel. The 5 isolated RS-485 ports can also be reconfigured as independent repeaters of 2 to 4 channels.

A channel can be split into a “V” configuration by removing the channel’s termination jumper from the board and adding termination resistors at either end of the “V” configuration. Note the total length of the “V” cannot exceed 4,000ft and 32 devices.

The RBH-AXS-OPTOMUX5 has removable terminal strips for each RS-485 channel and power strip with an optional 2.1mm barrel connector and an RJ11/12 for RS-232 communication (not used for SafeSuite applications).

Six (6) easy mount through hole standoffs, which accept #6 hardware, are provided on the circuit board.

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Channel Assignment

Channel A: Connects to the UNC-100 or UNC-500 controller up to a maximum distance of 4,000ft

Channel B: Connects to a maximum of 32 keypads with a maximum distance of 4,000ft

Channel C: Connects to a maximum of 32 keypads with a maximum distance of 4,000ft

Channel D: Connects to a maximum of 32 keypads with a maximum distance of 4,000ft

Channel E: Connects to the next RBH-AXS-OPTOMUX5 or connects to a maximum of 32 keypads with a maximum distance of 4,000ft

Recommended cabling: single pair – 24-AWG, SF/UTP, CM (Belden 9841 or equivalent), or 1.5 pair – 22-AWG, SF/UTP, CM (Belden 3106A or equivalent) for more robust applications.

Jumper Settings

Jumper	Purpose	Note
J1	RS-232 (NC)	Not Used
J2	RS-232 (NC)	
J3	RS-232 (NO)	
J4	RS-232 (NO)	
RXEN	Receive data (NC)	Applies to channel A, B, C, D, E
TXEN	Transmit data (NC)	
J+	Positive bias resistor (NC)	
J-	Negative bias resistor (NC)	
JT	Termination resistor (NC)	
JA	Repeater group selection (NC)	For special use only, leave terminated
JB	Repeater group selection (NC)	
JC	Repeater group selection (NC)	

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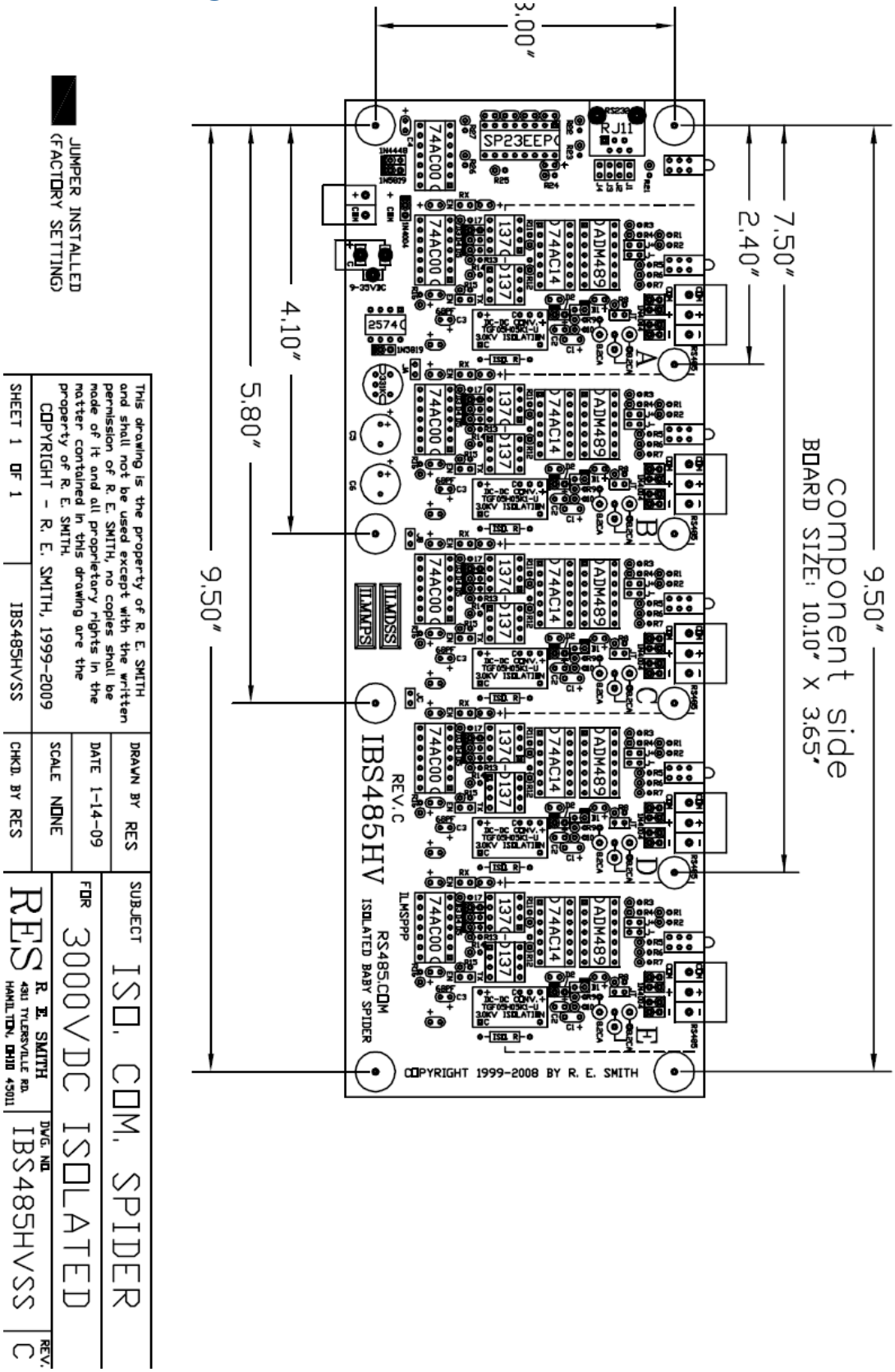
Component Diagram



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